APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/601,350	06/23/2003	Jonathan H. Connell	YOR920030166US1	7454

7590	12/29/2005

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EXAMINER
ARMSTRONG, ANGELA A

ART UNIT	PAPER NUMBER
2654	

DATE MAILED: 12/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	10/601,350	CONNELL ET AL.
	Examiner	Art Unit	
	Angela A. Armstrong	2654	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 September 2005*.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-22* is/are pending in the application.

     4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

     a)☐ All   b)☐ Some *   c)☐ None of:

         1.☐ Certified copies of the priority documents have been received.

         2.☐ Certified copies of the priority documents have been received in Application No. _____.

         3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

     * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
     Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
     Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459

(1966), that are applied for establishing a background for determining obviousness under 35

U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

1.   Claims 1-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Garg et al,

"Frame-dependent multi-stream reliability indicators for audio-visual speech recognition,"

Proceedings of International Conference on Acoustics, Speech and Signal Processing, ICASSP

2003, vol. 1, April 2003, pages 24-27 in view of Masai et al (US Patent Application Publication

2003/0177005).

2.   Regarding claim 1, Garg teaches a method for audio-visual speech recognition

comprising: providing an acoustic-only data model and an acoustic-visual data model (pages

24-26; section 2, entitled "The Multi-Stream HMM"; section 3, entitled "Stream Reliability

Indicators"; section 4, entitled "Reliability Based Stream Exponents."); and decoding at least a

portion of an input spoken utterance using selected data models (pages 24-26; section 2, entitled

"The Multi-Stream HMM"; section 3, entitled "Stream Reliability Indicators"; section 4,

entitled "Reliability Based Stream Exponents"; Tables 1-2). Garg does not specifically teach a

data model is selected based on a condition associated with the environment of the speaker.

However, selecting an optimum data model for performing recognition based on environmental

conditions so as to improve recognition accuracy and performance was well known in the art of

speech recognition. Masai discloses (paragraph 75) a method and device for producing acoustic

models for recognition and specifically teaches the speech recognition unit recognizes the

speech data and convert them into text data in accordance with the environment information of

the time when the speech data are uttered, the acoustic model for recognition selection unit

selects the acoustic model for recognition according to the environment information and

converts the speech data into text data by using the selected acoustic model for recognition.

It would have been obvious to one of ordinary skill at the time of the invention to modify

the system of Garg to allow for the selection of the most optimum data model, as suggested by

Masai, for the purpose of improving recognition accuracy and performance of the speech

recognizer, as was well known in the art.

Regarding claim 2, Garg and Masai teach storing the acoustic-only data model and the

acoustic-visual data model in memory such that model selection is made by shifting one or more

pointers to one or more memory locations where the selected model is located (Page 26-27,

section 5, "Database and Experiments").

Regarding claim 3, Garg and Masai teach model selection is based on a likelihood ratio

test (pages 24-26; section 2, entitled "The Multi-Stream HMM"; section 3, entitled "Stream

Reliability Indicators"; section 4, entitled "Reliability Based Stream Exponents").

Regarding claim 4, Garg and Masai teach model selection comprises selecting the

acoustic-only data model when a result of the likelihood test is not greater than a threshold value

(pages 24-26; section 2, entitled "The Multi-Stream HMM"; section 3, entitled "Stream

Reliability Indicators"; section 4, entitled "Reliability Based Stream Exponents").

Regarding claim 5, Garg and Masai teach the model selection step comprises selecting

the acoustic-visual data mode when a result of the likelihood test is not less than a threshold

(pages 24-26; section 2, entitled "The Multi-Stream HMM"; section 3, entitled "Stream

Reliability Indicators"; section 4, entitled "Reliability Based Stream Exponents").

Regarding claim 6, Garg and Masai teach the threshold value is based on a cost

associated with a recognition error (Tables 1 and 2; section 3, "Stream Reliability Indicators).

Regarding claim 7, Garg and Masai teach the likelihood ratio test is based on one or more

observations of a given visual feature (Tables 1 and 2; section 3, "Stream Reliability Indicators).

Regarding claim 8, Garg and Masai teach the given visual feature is associated with the

mouth region of a speaker of the input utterance (Page 26-27, section 5, "Database and

Experiments").

Regarding claim 9, Garg and Masai teach the model selection is performed at a rate

substantially equivalent to an observation rate associated with the audio-visual speech

recognition system (Page 26-27, section 5, "Database and Experiments").

3.   Regarding claims 10-22; claims 10-22 are similar in scope and content to method claims

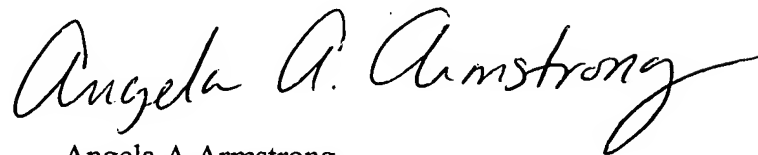1-9 and are therefore rejected under similar rationale.

Response to Arguments

4.   Applicant's arguments with respect to claims 1-22 have been considered but are moot in

view of the new ground(s) of rejection.

5.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Angela A. Armstrong whose telephone number is 571-272-7598.

The examiner can normally be reached on Monday-Thursday 11:30-8:00 PM.

        If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Richemond Dorvil can be reached on 571-272-7602. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

        Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Angela A Armstrong
Primary Examiner
Art Unit 2654

AAA
December 27, 2005